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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,270	01/05/2006	Yukio Kuramasu	96790P513	3356

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EXAMINER

VANCHY JR, MICHAEL J

ART UNIT

PAPER NUMBER

2624

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/560,270

**Applicant(s)**

KURAMASU ET AL.

**Examiner**

MICHAEL VANCHY JR

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8, 11 and 13-19 is/are pending in the application.  
4a) Of the above claim(s) 1-7, 9, 10 and 12 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 8, 11 and 13-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, filed 03/19/2008, with respect to the rejection(s) of claim(s) 8, 11, and 13-19 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nomoto et al., US 6,950,545 B1, and further in view of White et al., 5,461,417.
2. Claims 1-7, 9, 10 and 12 have been canceled. Claims 17-19 have been added.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**3. Claims 8, 11, 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomoto et al., US 6,950,545 B1, and further in view of White et al., 5,461,417.**

**Regarding claim 8:**

Nomoto teaches a device for inspecting for a crack in a metal surface or the like. Nomoto teaches an impurity measuring device (Fig. 2) comprising: a table on which a metal sample having a fracture surface is mounted with said fracture surface facing up (Fig. 2, 3, and Abstract); a sensing apparatus for sensing an image of the fracture surface irradiated with the light (Fig. 2, item "21", col. 4, lines 40-41); a continuous tone color image processing means for processing the sensed image into a continuous tone color image (Fig. 5, col. 2, lines 31-37 and col. 5, lines 45-49); and binarizing means for binarizing the continuous tone color image through comparison between a result of the continuous tone color image processing (col. 5, lines 50-52) and a threshold value (Fig. 16(d), and col. 9, lines 21-28). Nomoto is silent on using a reflection dome disposed over the table, to diffuse light towards the specimen. However, White teaches a reflection dome disposed over said table having a downward concave reflection surface of a substantially semicircular section with an opening in the vicinity of a vertex thereof (Fig. 13, col. 9, lines 24-37); a plurality of light sources which are mounted along an inner edge of said concave reflection surface of said reflection dome so as to emit light toward said reflection dome; an imaging means, disposed over said opening of said reflection dome (Fig. 13, col. 9, lines 31-49). The examiner takes into account that even though White does not explicitly teach having the lights mounted to the inner edge of the reflection surface in Figure 13, it is obvious that the light is coming into the dome as if the lights were connected, and thus would be obvious to one of ordinary skill in the art to attach said lights as in Figure 14. It would be clear to one of ordinary skill in the art to

modify Nomoto to include a reflection dome, so that continuous light can be diffused over the sample for increased accuracy in fracture inspection.

**Regarding claim 11, White teaches:**

Using light sources to emit light towards the reflection dome (Fig. 13), however, White does not explicitly state that these lights can be light-emitting diodes. White does state the use of light-emitting diodes, as used in Figures 12, 12A, and 15. Even though these lights are not the same as the lights used in Figure 13, it would be obvious to one of ordinary skill in the art that the light sources used in Figure 13, items "54" can be numerous different lighting types, including but not limited to LEDs, since the prior art was well aware of their existence and uses them in Figure 14.

**Regarding claim 13, Nomoto teaches:**

An impurity measuring device according to claim 8, characterized by further comprising: high-luminance region detection means for detecting an image region having a higher luminance than the threshold value from the image binarized by said binarizing means (Figs. 6, 15 and 16, col. 9, lines 16-23); and pixel count measuring means for measuring a pixel count of the image region detected by said high-luminance region detection means (Fig.9, col. 7, lines 50-54).

**Regarding claim 14, Nomoto teaches:**

An impurity measuring device according to claim 13, characterized by further comprising impurity region recognizing means for recognizing the image region detected by said high-luminance region detection means as an impurity region when the pixel count measured by said pixel count measuring means is larger than a predetermined pixel count (Fig. 9, col. 7, lines 55-61), and avoiding recognizing the detected image region as an impurity region when the measured pixel count is smaller than the predetermined pixel count (col. 8, lines 37-41 and col. 9, lines 21-28).

**Regarding claim 15, Nomoto teaches:**

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An impurity measuring device according to claim 8, characterized in that the sample comprises aluminum (Abstract, "inspecting a crack in a metal surface," the examiner takes into account that aluminum is a type of metal).

**Regarding claim 16, Nomoto teaches:**

An impurity measuring device according to claim 8, characterized in that said image sensing means comprises a CCD camera (Fig. 2, item "21" and col. 4, lines 40-41. The examiner takes into account that video cameras use CCDs containing grids of pixels.).

**Regarding claims 17 and 18,** White does not explicitly teach the ability of the dome to be movable, however, since the light projector, light source and light diffusion panel can all be adjusted (col. 8, lines 53-58), it would be clear to one of ordinary skill in the art, that the dome can be implicitly moved as well to compensate for uniform illumination across objects of different sizes or at different working distances.

**Regarding claim 19, White teaches:**

An impurity measuring device according to claim 11, further comprising a ring member mounted along the inner edge of said concave reflection surface of said reflection dome, wherein said light-emitting diodes are disposed on said ring member (Figures 14-16).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Vanchy Jr. whose telephone number is (571) 270-1193. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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